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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,289	12/07/2001	Pierre LeBrun	01184	4897

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ALEXANDRIA, VA 22314

EXAMINER
KASTLER, SCOTT R

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 04/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/926,289

Applicant(s)

LEBRUN ET AL.

Examiner

Scott Kastler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-23 and 26-41 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 17-23 and 26-41 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 09 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17-23, 26-35, 37-39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Dantzig et al'235, Dantzig et al'679 and Dantzig et al'187 in view of Mongrain. Each of Dantzig et al'235, Dantzig et al'679 and Dantzig et al'187 teach a device and method for injection of gas bubbles into molten aluminum contained in a treatment volume (14) where the device includes a static injection part (38) made of an inert material with a substantially planar surface without protuberances or discontinuities on which a plurality of orifices (40) are disposed, which can be made from any suitable material, including castable refractories, where the orifices and plate design is made so that bubbles do not come into contact while they are being formed (see col. 6 lines 25-60 of Dantzig et al'187, col. 4 lines 15-60 of Dantzig et al'679 and col. 6 lines 20-60 of Dantzig et al'235 for example), bubble size being limited to 10mm or below, where the flow of the molten metal through the trough (10) provides a shear force to the molten metal, thereby showing all aspects of the above claims except to specifically employ a wettable material for the plate (38), which would inherently serve to limit the spreading ratio and bubble size to that instantly claimed (see the instant specification, at pages 5 and 6, as well as applicant's arguments filed on 8-18-2004 where it is explained that the use of wettable materials alone will cause the instantly claimed bubble sizes and spreading ratios to occur). Montgrain teaches that at the time the invention was made, it was known in the

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art to manufacture a static injection part (7) of inert material made of iron, silicon carbide (a refractory carbide) or refractory metals (all stated by the applicant, at claim 3 for example, to be wettable by molten aluminum), where the static part (7) includes a number of holes, and where the wettable materials, such as the iron, silicon carbide or refractory metals used by Montgrain, provides a spreading ratio within the recited limits, as stated by the applicant at page 4, lines 11-15, and page 4, line 26 to page 5 line 15, thereby desirable reducing bubble size. Because each of Dantzig et al'235, Dantzig et al'679 and Dantzig et al'187 specifically desire reduction of bubble size, and also do not restrict the composition of the plate (38) to any particular material, motivation to employ well known materials (materials wettable by molten aluminum) for static injection plates as taught by Montgrain, as the material for the plate (38) of any of Dantzig et al'235, Dantzig et al'679 and Dantzig et al'187, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

Claims 36 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dantzig et al'235, Dantzig et al'679 and Dantzig et al'187 in view of Montgrain as applied to claim 17 above and further in view of Manabu et al. As applied to claim 17 above, Dantzig et al'235, Dantzig et al'679 and Dantzig et al'187 in view of Montgrain shows all aspects of the above claims except the use of bubble detection means for monitoring the bubble size. Manabu et al, cited by the applicant, teaches that bubbles in molten metal are known to be monitored by x-ray monitoring in order to more effectively control the gas introduction process. Because more effective control of the gas introduction process would also be desirable in the system disclosed by Dantzig et al'235, Dantzig et al'679 and Dantzig et al'187 in view of Montgrain, motivation

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to include x-ray monitoring means, as taught by Manabu et al, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

### ***Response to Arguments***

Applicant's arguments filed on 2/10/2005 have been fully considered but they are not persuasive. Applicant's argument that none of the Dantzig references teach the use of materials wettable by molten aluminum and that Montgrain teaches away from the use of a planar gas injector are not persuasive because the instant rejections are based upon a combination of references where the Dantzig references teach the use of a planar injector part of any desired composition and Montgrain is cited to teach the use of materials wettable by molten aluminum for gas injectors, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Applicant's further argument that since neither Montgrain or the Dantzig references teach that wettability alone can be employed for limiting bubble size is not persuasive because as advanced in the above rejections the above references are properly combinable and the combination teaches all features of the above rejections. The fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Finally, applicant's argument that the Dantzig references teach the use only of cast ceramics as the plate material is not persuasive because firstly, the Dantzig references do not limit the plate composition to any specific material

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and allow for the use of any desired composition including those both instantly claimed and those taught by Montgrain. It has been well settled that a reference is not limited to its preferred embodiments but includes all that it fairly teaches, including non-preferred and even undesirable embodiments. See MPEP 2123. Secondly, the silicon carbide, for example, taught by Montgrain as an acceptable plate material is a castable refractory ceramic material.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

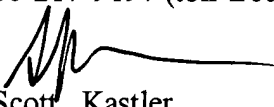
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Kastler whose telephone number is (571) 272-1243. The examiner can normally be reached on Monday through Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Scott Kastler  
Primary Examiner  
Art Unit 1742

sk